

The Plum Run Flint Quarries

James L. Murphy
Case Western Reserve University
and
John E. Blank
Cleveland State University
Cleveland, Ohio

Although the aboriginal use of "Plum Run flint" has been recognized by both amateur and professional archaeologist for over 90 years, scant mention of the deposit has been made in the literature. In general, Ohio geologists have not recognized the term or even the deposit.

Plum Run is a small intermittent stream that flows through section 36, Lexington Township, Stark County, Ohio, paralleling U. S. Route 62. Crossing the Mahoning-Stark county line, the stream turns northeastward and then northward to enter the Mahoning River in NW¼ section 30, Smith Township, Mahoning County. The terrain is glaciated and there are few natural exposures of bed rock. There was a natural outcrop along Plum Run at one time, but it was destroyed by construction of the Alliance Clay Products Company in 1905. The only known exposure of the flint at the present time occurs in the base of an abandoned gravel pit immediately south of the brick plant. A layer of high quality mottled blue and gray flint 1 foot thick can be seen in the north end of the pit. South and Schoenlaug (145:61) illustrate a microphotograph of a sample of "unknown flint" from this locality. A carefully measured stratigraphic section made by the present authors in 1967 follows:

Stratigraphic Unit	Thickness Ft. in
Middle Kittanning coal	2 3
Covered interval with approximately 10 feet of Middle Kittanning underclay at top	47 1
Lower Kittanning coal	1 8
Lower Kittanning underclay	1 9
Vanport ("Plum Run") Limestone Member	1 0

The close proximity of the Vanport Limestone to the Lower Kittanning coal is unusual but has been noted elsewhere in Ohio (M. T. Sturgeon, personal communication).

The bed of flint outcropping here at the top of the Vanport Limestone Member is a fine-grained, semi-opaque, mottled blue-gray

flint. It contains only a few small fragmentary fossil remains but has considerable amounts of included pyrite. The pyrite is so finely disseminated that it appears black and could be mistaken for streaks of carbonaceous material. Examination with a binocular microscope, however, reveals that the tiny particles are actually crystalline pyrite. Exposure to weathering rapidly changes the color of the flint to various shades of brown, tan, green, and vermilion. Most of the debitage collected at the site is fairly uniform, light orange brown, with streaks and blotches of gray, but many specimens also exhibit considerable amounts of dark red ferruginous coloration.

The earliest known account of the Plum Run flint quarries is a letter from J. L. Kite, Damascoville [Damascus], Mahoning County, to S. F. Baird of the Smithsonian Institution. Dated September 22, 1879, Kite's description of the quarry area follows:

There is a flint — chert — deposit on the S.W. Section of Smith Township, Mahoning Co., O. which has been largely worked, some 30 acres worked over; when the whites first came here there were found pieces of galena near these holes, which induced some persons to sink a shaft, thinking to find lead; they came upon the flint at a few feet below the level of the bottom of the excavations; the deposit was about one foot in thickness; I later visited the spot, found the land mostly grass, a small section in hoed crop, examined, it is literally full of chippings, found no implements but a chipping stone; will forward specimens to show the fine quality of the flint. From enquiries made of one of the parties who sunk the shaft, I learned that there was no rock in place above the flint, that the drift material lay immediately upon it in the higher ground near by. 50 to 75 feet above the flint is a vein of coal; another at near the same depth below it.

Practically all traces of quarry activity were destroyed by construction of the clay products company in 1905. Clay mining and gravel operations have also destroyed most of

the workshop areas in the immediate vicinity of Plum Run. Some debitage, blanks, and occasionally a finished point may be found by surface hunting immediately south of the clay products plant. Typical blanks are shown in the top two rows of Figure 1. The few finished artifacts that have been found in the vicinity of the quarries are generally made of other types of flint — Upper Mercer and Onondaga flint or pebble chert for example. Only Archaic points, such as Lake Erie Bifurcated, and Woodland types are known from the site.

The Plum Run quarry is probably the one indicated by W. C. Mills (1914:50) in his archaeological atlas of Ohio. Although Mills locates a quarry in the south-central part of section 15, Smith Township, a careful reconnaissance of the entire section reveals that the only outcrop of bedrock is in a strip mine at the northwest corner of the section. A few glacial erratics were noted, but most of the section is covered with scrub oak. Two cultivated fields were searched, yielding only a few pieces of unworked glacial flint. The strip mine exposes the Brookville coal and Putnam Hill Limestone, but the Vanport Limestone Member has been removed by erosion.

The upper part of the Vanport Limestone is exposed in a quarry in the NE¼ of section 18 and in the NW¼ of section 20. Very little chert or flint occurs at either outcrop, and no other outcrops of the flint bed 1 foot thick have been found, so the Plum Run flint facies of the Vanport Limestone seems to be very local in development. Other local outcrops of flint at the same stratigraphic position are frequently encountered throughout the outcrop belt in Ohio. The most notable deposit is the well-developed occurrence at Flint Ridge, Muskingum and Licking counties. While Flint Ridge flint is so distinctive in lithology that chippage can be recognized even when found hundreds of miles away from the quarry site, it is doubtful that the Plum Run variety can be recognized outside northeastern Ohio. Its identification at sites very far from the quarry area is rendered extremely difficult, for usually only a few chips are available and the physical properties of Plum Run flint are not diagnostic enough to distinguish it from material of quite different provenience. For example, during the Cleveland Natural Science Museum's excavations at the Reeves, South Park, and Fairport Harbor sites, a few chips of flint indistinguishable from Plum Run flint

were found with the glacial pebble chert. Only two chips from the Reeves site (total chippage, 11,890) are believed actually to represent Plum Run flint; other chippage of very similar lithology represents glacial material from a northern source.

The glaciers also plucked true Plum Run flint from the outcrop area and distributed it over much of the western half of Columbiana County. In all likelihood the aborigines utilized as much Plum Run flint from such glacial drift as they actually quarried. In addition, subsequent to the retreat of the glacier, the Mahoning River transported considerable amounts of Plum Run flint northward from the outcrop area, so that now the flint may be found in outwash deposits all along the upper Mahoning valley, far from the actual outcrop. Surface collecting at the remnants of the Lewis village site has yielded a considerable amount of lithic material, the bulk of which is Plum Run flint. This flint could have been picked up from the river gravels at the site and need not have been quarried at Plum Run and carried to the site. The Lewis village site, now largely submerged by Lake Milton, appears to have been predominantly Late Woodland and Late Prehistoric, but it yet remains to be seen whether active quarrying occurred at Plum Run during these time periods.

Of considerable interest to collectors are the artifacts illustrated in Figure 2. All of these are fakes made of fresh, dark gray and blue Plum Run flint. The blanks and crude triangular points were found by the senior author in 1966 on the surface of a bulldozer cut at the Plum Run gravel pit. The three fluted points and the three corner-notched points, also of fresh Plum Run flint, were purchased from a Columbiana County antique dealer. The fluted points are said to have been part of the collection of the late Willis Magrath of Alliance, Ohio. The notched points reportedly came from the Detwiler farm, Fairfield Township, Columbiana County. All of these are unquestionably fakes, and collectors should be wary of such artifact material from this area. The fakes are readily distinguished from authentic Plum Run material because of the striking difference in color of the fresh and weathered flint. Plum Run flint weathers very rapidly so that even Late Prehistoric points made of this material have the typical orange brown color and are never blue and gray. Fake artifacts made of fresh Plum Run

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Fig. 1 (Murphy and Blank) Typical blanks of Plum Run flint.

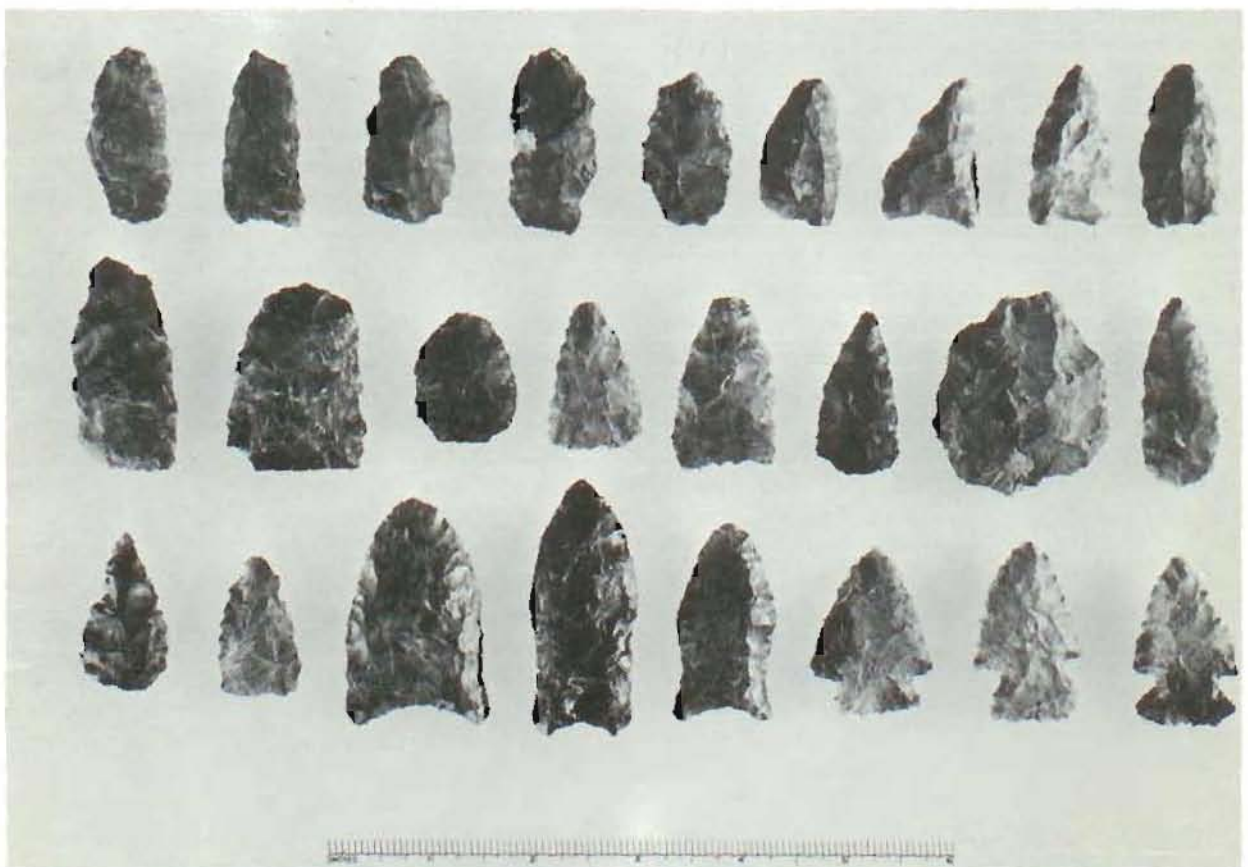


Fig. 2 (Murphy and Blank) Fraudulent points and blanks made from fresh Plum Run flint.

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flint could be confused with authentic specimens of Upper Mercer "Coshocton County" flint, but that material tends to be darker in color and more fossiliferous. It generally lacks gray coloration and is often mottled blue and white, unlike fresh Plum Run flint.

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